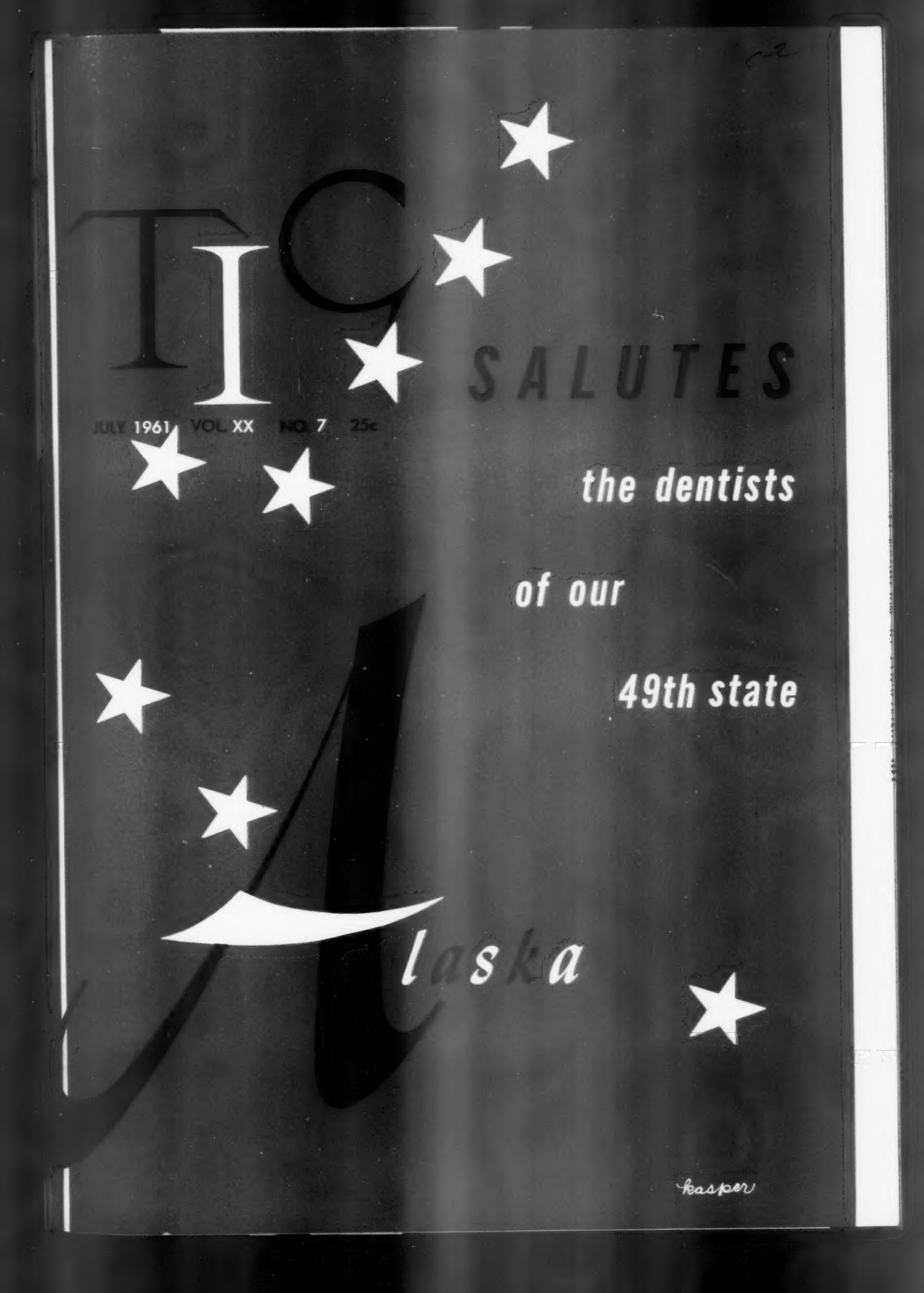
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TIC
A MAGAZINE FOR
DENTISTS
DENTAL HYGIENISTS
DENTAL ASSISTANTS

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July 1961 Vol. XX No. 7

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DISORDERS OF THE TEMPOROMANDIBULAR JOINT

By JOSEPH MURRAY, D.D.S.

PART I OF A TWO-PART SERIES

1.

Call it what you may—disturbance, disease, arthritis, arthrosis or pain-dysfunction syndrome—the enigma of temporomandibular joint disorder has long plagued man, from the days of the Egyptians, 3000 B.C., to the 20th century with its space-minded astronauts.

Over the years, the concept and methods of treatment of these disturbances has changed. According to Dr. Laszlo Schwartz, the principal method of therapy two decades ago was to "open the bite," because it was erroneously thought that the various symptoms were due to bite closure—based on the hypothesis of Dr. J. B. Costen—resulting from loss of posterior teeth. This practice waned with greater knowledge of the importance of the free-way space and with evidence of damage done by bite opening.

Later, emphasis was placed on centric relation rather than on vertical dimension. Patients suspected of having Costen's syndrome* were treated for the correction of faulty occlusion by selective grinding, restorations, or orthodontics.

Afterwards, the intra-articular injection of a sclerosing agent like sodium psylliate was recommended for joint hypermobility, but later was used for such symptoms as clicking and pain.

In a study of many patients with mandibular joint disorders, Dr. Schwartz found that 90 percent had a chief complaint of facial or head pain, described as a constant dull ache that was aggravated by movements of the lower jaw.

Another 10 percent complained primarily of some type of mandibular dysfunction, such as clicking, subluxation, dislocation, or limitation of motion. Some patients had marked dysfunction with little pain; others had marked pain with little impairment of function. Most had some dysfunction and pain.

Writer's cramp of the wrist, tennis elbow, charley horse, stiff neck and certain types of bursitis are examples of such pain-dysfunction syndromes in other parts of the body.

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* Broadly stated, the symptoms in this syndrome are: pain, which may be localized or referred to many structures, including the ear, head, maxillary sinus, nose and the tongue; clicking of the joint, which may be described as a clicking, snapping or grating; disturbed muscle function, which may occur as a result of an upset in the delicate neuromuscular balance that occurs via the proprioceptive fibers found in the periodontal membrane; and ear symptoms, which are regarded as being present less often than was thought by Costen and which are considered by many investigators to be purely coincidental.

Further investigations, according to Dr. Schwartz, indicated that these symptoms were due to painful impulses arising from the muscles, resulting in spasms, which in turn were painful. This set off a self-perpetuating cycle of pain and spasm. In many instances, anesthesia by ethyl chloride spray or procaine injection into the muscle permitted stretching of the latter and proper functioning.

When pain was not too severe, exercise alone broke the cycle and restored normal function. Additional experiences with patients who were under pressures of anxiety (tension) indicated that this pain-dysfunction syndrome was precipitated at this time.

Which takes us to a current celebrity (if I may digress for a few moments) who "speaks our language." Not too many Americans are aware that Dr. Janet C. Travell, first woman to hold the post of White House physician, is a recognized authority on orthopedic medicine.

Member of a noted family of physicians, graduate of Cornell Medical College, teacher and staff member at top New York hospitals, she has won important research grants and written many articles in leading medical journals. Dr. Travell gave up an extensive practice to come to Washington as President Kennedy's personal physician.

Because muscular aches and pains are the most common of all human ailments; because Dr. Travell has cured the President of disabling back pains; because she has treated thousands of other patients, including Senator Barry Goldwater, with outstanding success; because she is interested in a branch of medicine which is indigenous to dentistry – both the layman and the professional healer will view her new role with more than casual interest.

To dentistry, her appointment is significant. Dr. Travell speaks and writes with authority on the "slipped disc," sciatica, and allied pains in the back that plague the dentist because of his occupation. In theory and practice, her familiarity with muscle spasm—probably the most common complaint of the human race—the everyday garden variety of pain—enables her to treat her patients and instruct her colleagues in the latest therapeutic methods and technics.

Of added interest to our profession are her pioneering efforts in the treatment of temporomandibular joint syndrome with ethyl chloride spray or procaine injection when she suspects that muscle spasm is the instigator.

She cites a striking example of referred pain to the teeth and jaw region—the story of a man who suffered from toothache; his teeth were actually sensitive to the ordinary pressure of chewing—with a certain tooth reacting to heat, cold, and biting.

This patient had three trigger zones in his temporal muscle; when Dr. Travell pressed the right points on his temple, the patient felt it in his tooth.

After injection of procaine into these trigger areas, the teeth lost their sensitivity to biting pressure immediately. Actually the teeth were sound. It was the referred pain from the temporal muscle that had caused the discomfort.

"WHEW! THERE'S NOTHING LIKE A LITTLE RELAXATION AFTER A LONG DAY OF SEEING PATIENTS!"

Spasms of the temporal and masseter muscles (the latter is the worst offender) are notorious for referring pain to the temporomandibular joint. What is a muscle spasm?

It is a state of shortening of a skeletal muscle in which the person loses the capacity to relax the muscle voluntarily. Dr. Travell puts it this way: if you say to your arm, "Relax," then your wrist will drop and the muscles will lengthen. But the individual who has muscle spasm cannot do this.

Another feature of muscle spasm is an "increased stretch reflex." This means that if the muscle is lengthened—if it is stretched, passively—it reacts by contracting.

Muscle spasm is usually but not always painful. However, when the muscle shortens far beyond its physiological limit, the contraction might be called a "cramp," an extremely painful condition.

In addition, when only part of a muscle shortens, distortion occurs and shearing stresses are placed on the blood vessels and nerve structures within the muscle, with resultant pain.

It is Dr. Travell's opinion that stiff neck, muscular headaches, the atypical facial neuralgias, due to pain referred from certain neck muscles and the muscles of mastication, are actually spasms. Likewise, many muscular-pain syndromes of the chest are mistaken for heart disease, which they mimic.

Can the patient tell if it is a muscle that is hurting him? No. When a muscle is in fixed spasm, Dr. Travell feels that it shuts down its own blood supply. It can clamp down on the small end-arteries that supply it with blood, which must penetrate the muscle mass.

Thus, the muscle is working with an inadequate circulation, and this gives rise to "ischemic pain"—pain caused by an insufficient flow of blood in relation to the work performed.

Ischemic muscle usually sets off "referred pain." This is analagous to the pain of coronary thrombosis, or heart attack, where the pain is felt up or down the sternum or breastbone—or it may be perceived in the neck, or in the back, or down the arm to the fingers.

The skeletal muscles are like the muscles of the heart and other organs, because with ischemic pain, and spasm, the former is almost always perceived at a distance from the muscle which is the source of the pain.

2.

In the first half of this installment, we noted that the majority of patients with mandibular joint disorders complained of facial or head pains, described as a dull ache that was aggravated by movements of the lower jaw.

Also, we were made aware that stiff neck, muscular headache, the atypical facial neuralgias due to pain referred from certain neck muscles and the muscles of mastication, were actually spasms.

So we see that each muscle has its own pattern or distribution of referred pain, just as the heart has a certain pattern (pain may be felt in the breast, neck, back, left shoulder, arm or fingers).

Other guides for recognizing joint disturbances, besides referred pain, are limitation of motion at the joint which it crosses and spontaneous pain which is reproducible on examination, if one palpates the muscle which is the source of the pain.

Such trigger areas, as they are called, can aid the physician or dentist in locating the original site of the referred pain.

If the impression has been given that temporomandibular joint disorders are primarily caused by muscle spasm, let me add that such a conception is highly inaccurate; for, undoubtedly, there are multiple etiological factors producing the syndrome; and that no one condition can be pointed to as the causative agent.

Suffice it to say that we can classify joint pain on the basis of cause as: local pain resulting from a pathologic state of the joint, referred pain from pathologic or pathophysiologic processes elsewhere, pain referred from the temporomandibular joint to other parts, and psychogenic and neurogenic pain of the mandibular joint itself.

Dr. Arthur S. Freese classifies pain of local origin as traumatic, neoplastic, infectious, and arthritic.

An example of a traumatic pain to the joint would be a severe malocclusion as in the case of an over-erupted third molar producing pain, swelling, muscle spasm, and limitation of motion. A case history, together with clinical and roentgenographic examination, should suffice for proper diagnosis, contends Dr. Freese.

With neoplasms or tumors initiating the pain, the symptoms may vary, stimulating other conditions. Fortunately, such cases are rare. However, roentgenograms will establish the cause.

As for infection being the instigator of the joint disturbance—the symptoms are pain, swelling, muscle spasm, and limitation of movement—a systemic condition usually involving an extension from an infectious process in neighboring structures, most likely is the offender; but fortunately, this situation too occurs infrequently.

In judging arthritis as a causative agent of joint pain Dr. Freese considers the rheumatoid variety and degenerative joint disease, (osteoarthritis) separately. Because the symptoms of both conditions in the early stages are so similar, only the systemic nature of rheumatoid arthritis will substantiate the diagnosis.

Dr. Freese states that the etiology of osteoarthritis is not completely understood; that researchers feel

degenerative joint disease is a process associated with the aging of joint tissues, aggravated by strain, hemorrhage, trauma, and static deformities, the end results depending on a summation of these factors; that the causes of osteoarthritis of the temporomandibular joint are:

1. Microtrauma produced by traumatic occlusion
2. Overclosure of the mandible
3. Hypertension of the mandibular musculature
4. Age
5. Heredity

Pain on motion, which becomes worse with prolonged activity, is the chief symptom of degenerative arthritis, contends Dr. Freese. The pain, usually an aching type and rarely intense, is in most cases relieved by rest. However, prolonged rest, as in sleep, produces stiffness, which is also a common symptom of the disease.

"Dry, grating sounds are present in the joint, and swelling and tenderness may also be found," adds Dr. Freese. "When the pain is severe, the muscles may be thrown into a spasm, a protective measure meant to immobilize the joint and so relieve the pain."

Here, clinical and radiographic examination will usually corroborate any suspicion of arthritic changes in the joint.

With pain that is referred to the temporomandibular joint from other sites, Dr. Freese points out, myofascial pain originating in the head and neck musculature is often responsible.

He lists muscle spasms (especially the masseter), myofascial trigger areas, and muscle spasms in the zone of reference of myofascial trigger areas as sources of referred pain.

What is muscle spasm? Earlier we referred to Dr. Travell's definition: "A state of shortening of a skeletal muscle in which the person loses the capacity to relax that muscle voluntarily."

And what causes muscle spasm? Dr. Freese enumerates the following:

1. Abnormal strains on the mandibular muscles
2. Overclosure of the mandible
3. Abnormally increased interarch distance
4. Malocclusion
5. Emotions

Regarding strains on the muscles, it is readily apparent that keeping the mouth open too long, in dental treatment, can induce spasm.

As for overclosure of the mandible, Dr. Freese says, "Overshortening the muscles of mastication eventually throws them into spasm from the constant overstimulation of the proprioceptive nerve endings and the reflex arc thus established."

With an abnormally increased interarch distance, improper dental restorations or anything producing

The first Russian dental mission to the United States visited the National Institute of Dental Research, May 17, when they inspected the new NIDR building, one week prior to its official dedication, with Dr. Francis A. Arnold, Jr., Director (above third-left) and Dr. C. Willard Camalier, Director of the Washington Office of the American Dental Association (extreme left). The Russians are members of an international exchange mission touring dental institutions in this country as guests of the State Department and the American Dental Association. Dr. Arnold joined an eight-member American dental mission that left June 1 to visit research institutions in Russia as part of the international exchange of ideas and progress in the field of dentistry. Shown above are: Drs. C. Willard Camalier, ADA; Aleksei Ivanovich Doinikov, Moscow Stomatological Institute; Francis A. Arnold, Jr., NIDR; Antonina Illarionovna Pozdnyakova, Kiev Medical Institute; Anatoli Ivanovich Rybakov, Moscow Stomatological Institute; Voyacheslov Ivanovich Karnitski, Omsk Institute, Siberia; and Vladimir Feodorovich Chekin, Director of Laboratory of Surgery, Moscow.

an overstretching of the muscles will by overstimulation produce spasm.

With regard to malocclusion, it is Dr. Freese's opinion that if the attempt of the musculature to establish a harmonious relationship between the jaws during function does not succeed, the muscles will work themselves into a state of spasm in a continuing effort to attain the desired harmony.

Finally, grinding or clenching of the teeth, common in the emotionally disturbed, will induce spasm because of excessive strain and constant stimulation of the muscles.

Clinicians like Drs. Travell, Schwartz, and Freese have demonstrated that these spasms are evident on physical examination. When palpated, the muscles may feel tender and boardlike. A limited ability to open the mouth, a lateral deviation of the mandible, or both, will show evidence of dysfunction.

Ironically enough, the patient is usually unaware of the existence of the trigger area, which is a small, circumscribed, extremely hypersensitive region likely to appear in any of the myofascial tissues.

And, as has been previously stated, the presence of such areas are specifically involved in head and neck pain and the referral of pain to the temporomandibular joint.

Dr. Travell divides the etiology of the myofascial trigger area into precipitating and predisposing causes. The precipitating causes are:

1. Sudden trauma to musculoskeletal structures
2. Unusual or excessive exercise
3. Chilling of the body
4. Immobilization
5. An acute visceral lesion, such as myocardial infarction or appendicitis, with localized reflex spasm of the skeletal musculature
6. Acute arterial closure in the extremities, as in popliteal thrombosis
7. Rupture of an intervertebral disk with nerve root pressure
8. Acute emotional stress

The predisposing causes of the trigger area are:

1. Chronic muscular strain, produced by repetitive movement frequently performed over a long period of time
2. General fatigue
3. Acute infectious illness, e.g., infectious mononucleosis, acute hepatitis, or an acute upper respiratory infection (postinfectious myalgias)
4. A chronic focus of infection
5. Nutritional deficiencies
6. A progressive lesion of the nervous system
7. Nervous tension
8. Syndromes of the menopause and male climacteric
9. Hypometabolism with creatinuria

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Brooklyn 19, N. Y.

Part II—August TIC

Thoughts on Patients

I

A patient thinks it very strange,
A dentist can't remember,
Which tooth it was he filled for her—
Was it last September?

And yet, despite the printed card
To act as a reminder,
Comes the hour, his office is—
Seldom where you'll find her.

II

Patients prone to pace the floor,
When they have to wait,
Enter, oh, so nonchalant,
When they're half hour late!

III

Folks who pay their bills when due,
My hat is off to you!
Since, woe is me, they're all too few,
What can a dentist do?

IV

What to do with the patient who says,
"This isn't a regular visit"?
Someone pays for the time you lose,
If it isn't he—who is it?

Ethel Willis Hewitt

SLOW-MOTION X-RAY MOVIES

PHOTO AND TEXT BY AUTHENTICATED NEWS

Radiologists at the University of Rochester School of Medicine and Dentistry are shown in the photo above testing a new slow-motion, stop-action movie projector that permits projection at film speeds as low as three frames per second without flicker, primarily for use in the interpretation of x-ray motion picture studies of congenital heart diseases. Normal projection speed is 16 frames per second for silent films and 24 frames per second for sound movies.

The new unit is said to provide truer and more effective slow motion, with better quality, permitting more exact studies and better diagnosis than has heretofore been possible, and to offer promise in picturing abnormal heart conditions that previously have been hidden from medical men. Heart action, for example, is slowed "from a run to a walk," allowing medical scientists a closer look at rapid and subtle changes in various parts of the heart. The process also will be valuable in studying other body processes, including swallowing and kidney functions.

The men in the photo are, from left to right: Sydney A. Weinberg, designer of the apparatus, and Drs. Frank Campeti and George H. Ramsey.

FOR THE WAITING ROOM **REMOVE THIS SECTION**

Specialists at Your Service:

PUBLIC HEALTH DENTISTRY

UNITED PRESS INTERNATIONAL PHOTO

Great numbers of children and adults in the United States enjoy good dental health because of the interest and efforts of dentists they have never met or even heard about. This has been possible because of the accomplishments of the dental public health programs, which benefit all of us, directly or indirectly.

For more than half a century the dentists of the United States, through dental public health programs that they themselves initiated, have studied and worked for the prevention and control of dental disease in the community as a whole.

Today the public health dentist is a specialist qualified by special training and experience. He may work locally, state-wide, regionally, nationally or even internationally. In a local community, he creates an understanding of the need for early and regular dental care for children; helps to build good oral habits among them; and conducts dental examinations of the children, referring them to their family dentists for necessary treatment.

The public health dentist in a state program is usually concerned with researching the dental needs of the community and assisting in setting up services to meet those needs; preparing health information material for teachers and others; supervising surveys

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PHOTOS BY H SERVI

At left, a school dental health clinic d to condu
the Public Health Service and the lth.

Center photo: the public health denti g of the n
dental care for children.

At bottom, using multiple chair preced sodium flu
of children in public schools.

concerned with the effects of fluoridation and examines teeth with special reference to decay, malocclusion, and diseases of the gums.

The duties of the public health dentist at the national level include assisting the states in setting up and operating their statewide programs of state and local services. In applied field research, federal dentists formulate and conduct nation-wide programs for the prevention and control of dental disease and, working with state and local health departments, provide the technical and consultant assistance in applying new dental knowledge and technics.

Thus, through federal, state, and municipal public health programs, these experts are setting up and administering, in cooperation with local dentists, disease-detection and treatment services for children and otherwise helping communities to combat and reduce oral disease and constantly improve their dental health. In New York City, two out of every three school children receive dental care, 90 percent of it in the offices of their family dentists, according to Dr. Leona Baumgartner, New York City Commissioner of Health. This tremendous achievement, a record of dental treatment that is twice as good as the record of the general population, indicates the results that public health education can realize.

Such school dental programs have been getting urgently needed dental attention for hundreds of thousands, millions, of children throughout the na-

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tion, and making it possible for these children to grow to adulthood with a higher level of oral health than they might otherwise enjoy—and certainly a better dental health than their parents experienced. Nor will they face the extended periods of dental care, nor the costs, that their parents faced.

Of course, the greatest achievement of dental public health has been water fluoridation, which will prevent more than 50 percent of all new dental decay in children who use such water continuously.

Until now, most dental public health measures have been focused upon dental decay, especially in children. In the years to come, however, dental specialists will make giant strides in other directions. They will set up programs designed to attack the other great source of tooth loss, diseases of the gums, such as gingivitis and pyorrhea. Right now specialists are hammering out a scientific measuring unit that will make it possible to gauge the incidence of oral disease in a community. Such a measuring device is the first essential in a public health program. Hopefully, dental public health specialists will be as successful in cutting down the toll of tooth loss due to periodontal disease as they have been in reducing the loss of teeth due to dental decay.

It is quite possible that no group has done as much for the dental health of American children as this small, but increasing, number of specialists—America's public health dentists.

PHOTO BY PUBLIC HEALTH SERVICE

A dental public health exhibit on climate and fluoridation. Such exhibits are employed in public education programs on dental health.

THE AMERICAN BOARD OF DENTAL PUBLIC HEALTH

The American Board of Dental Public Health was established upon recommendation of the American Association of Public Health Dentists and the Dental Health Section of the American Public Health Association. It was incorporated in 1950.

The principal purposes of the Board are to protect and improve the public health by the study and creation of standards for the practice of dental public health in all its aspects and relationships, and to grant and issue to duly licensed dentists certificates of special knowledge and ability in preventive dentistry and dental public health.

Dental public health is defined as the science and art of preventing and controlling dental diseases and promoting dental health through organized community efforts.

Among the requirements of eligibility a dentist must have to be certified by the Board as a qualified public health dentist are special professional experience and special training in public health, and he must be engaged in administration, teaching, or research in dental public health as a full-time specialty.

Dentists who are certified by the Board are called Diplomates of the American Board of Dental Public Health.

Each such specialist is required to sign the following pledge:

"I hereby pledge myself to the highest ethical standards in the practice of dental public health."

THE DEADLY CURE

By HANNA SCHILLING

The war in China had altered everything in life except the weather. The September of 1947 foretold autumn's coming, as had Septembers of all the years previous. This September was also the signal for my two sons to prepare for their final trip into the mountains surrounding Peking before the long white winter would arrive. It was through this final trip that I discovered the remarkable flower in the hills I had traversed so many times before.

These trips had always begun in the early morning, but this time the sun was already high in the sky before the city had become lost to our sights. Our bicycles had necessarily to go slowly along the narrow rutted paths, which did not widen until we arrived at the Village of the Eight Precious Things. The town, which takes its name from the small Buddhist temple perched on a tiny hill nearby, was surrounded by paths widened by the weight of many passing feet.

Our bicycles led us away from the village and into a valley. It was in this valley, in the middle of a field, that I found the flower. It was growing near a pile of stones which had been deposited there by the owner of the field, during his spring plowing. The field had been harvested and was now quite barren, but for the pile of stones. As the plant on which the flower grew was a creeper, the stones were completely covered by the foliage.

I plucked the flower. It was feathery, like a single carnation, and gave off a sweet, vanilla-like aroma. I found also a fruit, green and very smooth, a bit smaller than a plum. I told my boys to ask the peasants, who had gathered about our bicycles, for the name of the flower. Not wishing to lose face because of their mother's very halting Chinese, they asked. The people nodded and grinned in a friendly manner, but either they did not know the name of the flower or didn't believe their ears at hearing their own dialect coming from the mouths of the boys. Finally, I said, impatiently, "Ask an old woman, they always know." A very frail, white-haired old woman came to me at that point. She said, "Don't let your dogs eat it," and went away. Perplexed, I shouted after her, "Of course not. They eat bones." This caused no little commotion. The peasants were disapprovingly astonished at such extravagance, for bones cost money and were used only for soup.

Seeing there wasn't anything else to learn from these people, we continued along our way.

I had forgotten about the incident by the time we arrived home that evening. Looking into my basket after dinner, I found the flower and fruit where I had placed them, and immediately became fascinated again. Before an hour had passed, I had asked all of my neighbors about the flower, but nobody knew anything about it.

It occurred to me, after some reflection, that I had had occasion to notice, often, that many of the witty and appealing phrases used by the Chinese in song and proverb are almost exactly duplicated in our own languages. This is true for all of us who live on earth, under the same moon and the same sun, with experiences that are the same for all of us. As I began to consider this, it became clear that the old woman had not meant what she had said to me to be taken literally. She had wanted to tell me that the plant was poisonous, and had reverted to a figure of speech, if an odd one. Because of this very oddity, I tried a shot in the dark. I consulted my German encyclopedia under the word *Hund* and there it was — *Hundsgift* or Dogpoison, the old woman's name for the flower.

The boys had gone into their little house across the garden to sleep and I sat alone in the night, amazed and amused by the simplicity of the solution of the problem.

Reading into the article in the encyclopedia, I found that the plant is well-known in Europe. Be-

cause of its delicate pink and white flowers and its fragrance, it is cultivated in palace gardens to climb trellises and walls. A relative of the Oleander, it belongs to the family of soapworts. I then took a light into my own garden to look at the Oleander bushes we had planted during the summer. The single blossoms resembled my foundling in almost every detail. The smell was the same. The mystery was solved, then. The pod, which I had placed on the outside window ledge, never ripened to produce seeds for my garden, but mildewed and dissolved, and finally blew away.

The gradually-increasing coolness in the weather found us, several weeks later, visiting our old bearded missionary friend, who lived but a few miles from Peking. His home and headquarters was an ancient edifice which had, in years past, been a famous Buddhist temple. Once very elegantly appointed, it was now falling apart as a result of age and neglect. Our friend had managed, though, through the modest contributions given reluctantly by his newly-won Christians in the village, to repair and repaint parts of the temple. He had even managed to acquire a number of paintings depicting the wanderings of Christ. In these, all done by Chinese artists, the characters all looked Chinese. This astonished us at first, but soon seemed very natural.

The missionary was not there when we arrived. He had gone into a village to administer the last rites to a woman who, the cook told us, had died that very afternoon of a toothache.

After awhile, the missionary arrived, obviously very upset. He said that he was very uneasy about the woman's death. He could not understand what had made her die so suddenly. He said that the husband had come to the mission late that morning to plead for the missionary's aid, and that the woman was dead by the time they had reached the village.

The missionary's medical skill was known throughout the region. This skill was applied most often to the bandits who lived in the neighboring hills and who promised his personal safety and that of his flock in exchange for prompt attention to their ailments. Most of these ailments consisted in broken bones and bruised limbs, which would result when they fell from their donkeys while drunk on millet whiskey, or when they would fight among each other over lost games and bets. His embassy kept the missionary well-supplied with aspirin, large bottles of iodine, and a vile-looking purple solution which he applied generously on all bruises and covered with long strips of white gauze, for all to see and envy.

The missionary now paced before me and went along with his story. It seems that, much earlier in the morning, the woman had come to his mission while he had been treating other patients. She complained of a toothache, but explained that, having been married only a short time, she did not want to annoy her husband with her misery. She wanted the missionary to permit her to pick a few leaves from a plant which grew in his garden. In this manner, she had said, she could soothe the pain until next market day, when she would make a trip on the donkey and consult the dentist in Peking.

The Chinese peasant has, as has any other peasant, an intimate knowledge of the laws of nature. He knows of the potencies of herbs and barks and of the teas brewed of them. Everywhere one could see people going about their daily lives with leaves plastered to their temples against a headache, or applied to the bruised knee of a child who had fallen.

As the missionary's story progressed, I began to feel very uneasy. I interrupted to ask whether he had determined the identity of the leaves which had been picked. He told me that the gardener had seen the woman pick a few Oleander leaves, and had heard her say that she would brew them into a tea for quicker results. When the missionary had come to see her at noon, she had just died as a result of heart failure.

I realized, then, the source of my uneasiness. I recalled the words of the old woman, and those of the encyclopedia, and realized, horribly, that I could say nothing about my discovery.

This old man had foregone love, affection, and a family life, and had indeed given his whole life to serve these poor ignorant people in their need as he had seen it. How horrified he would be, if he had found the explanation for the woman's death in his own garden. How he would blame himself for permitting her to take the leaves! And again, how could I be certain that the flower was poisonous? The encyclopedia had said nothing about that characteristic. It was the name, Dogpoison, that troubled me so.

When we returned to Peking, I called on one of my friends, a physician in one of the Western hospitals. I directed our conversation, casually, to the Oleander, and asked him what there might be in this plant which could kill a human being. He explained, as though this were a well-known fact, that for years an extract had been made from the Oleander leaf. This extract was being used to take the place of digitalis, which had become very scarce in Europe. The extract was used in cases which required heart stimulation, and overstimulation would result in death.

All these years, I have preserved this story in my memory and have not told it, lest the old missionary be harmed. Now I have word that his bandit "friends" killed him, to make him the martyr he wanted to be, to present him with a place among the other lovers of mankind who had before him fought and lost in the cause of life.

The busy dental clinic.

THE DADE COUNTY DENTAL RESEARCH CLINIC

By MAURICE J. TEITELBAUM, D.D.S.

Dade County, Florida, boasts one of the most colorful, exciting seacoast resorts and entertainment sites in the world, famed Miami Beach. But it might be justifiably as proud of its Dental Research Clinic, a unique facility that is one of the most progressive institutions of its kind anywhere.

Miami area dentists have found that the Dade County Clinic provides not only the best possible treatment for indigent patients, but also serves as a fine postgraduate school and workshop for its members. The dental profession has long been aware of the lack of proper facilities for graduate work and study, even in the large urban areas. Many county and city dental societies offer a variety of postgraduate courses during the year, but most of them are review courses and at best consist primarily of lectures and offer little opportunity for practical clinic work or research. The more extensive courses demand a sacrifice of productive office time and require fees running into hundreds of dollars. Dental clinics in hospitals are devoted almost entirely to the dental care of the clinic patients. Comparatively, physicians are afforded the opportunity of learning of new developments in medicine, surgery, and methods of treatment at most of the modern hospitals.

In 1947, Dr. James L. Armstrong, recognizing the need for a dental research center, initiated plans for the opening of the Dade County Dental Research Clinic. At its inception the membership was 60 dentists and $1,000 worth of second-hand equipment. In less than 15 years the organization has grown to more than 200 members and now occupies large offices in a modern building in Miami. The present operatory is air-conditioned and equipped with 11 units, complete with high speed attachments for chayes, imperator, and aerotor. The clinic also has an x-ray laboratory complete with four modern x-ray units, a completely furnished prosthetic laboratory, a doctor's conference room, and a patient reception room.

Unlike so many other clinics where the dentist is solely occupied with the routine treatment of patients who cannot afford adequate dental care, the Dade clinic offers the dentist a big extra dividend. In the course of their duties at the clinic, dentists are brought together for an exchange of ideas. Films and special lectures are presented for the purpose of professional instruction and enlightenment. With clinic facilities at hand, it is an easy step from theory

to practice. Aside from the initiation fee of $25 and annual dues of $25, the only other cost to members is one day a month devoted to work in the clinic. However, many of the dentists, grateful for the opportunity afforded them at the clinic, have made voluntary financial contributions to the institution.

The Dade County Dental Research Clinic covers every phase of dental treatment, each specially presided over by an acknowledged local expert in the field. Dentists who work in the clinic must first spend a year in the operative department before they can undertake any of the specialties such as prosthodontics and orthodontics.

In order to staff the clinic with competent auxiliary personnel, high-school students are offered courses in connection with the clinic. These courses are given to boys and girls in dental laboratory technology and dental assistance respectively. The program includes regular academic subjects required for a high-school diploma as well as the specialized dental courses. The final year of schooling is a practical one which is spent in on-the-job training in the clinic.

With the aid of the community welfare organizations, the cost per patient on a mass basis is relatively low. Even bridgework and prosthetic cases cost as little as $12.50 per patient. People desiring clinic treatment are first screened for eligibility and qualified by the welfare division caseworker. According to Mrs. Grace Smint, department head of the clinic, "If these persons are citizens of the county and have lived here over one year, if they are registered voters, and if they have satisfied the county investigator that they cannot afford private dentistry, they are certified to the clinic for service. In making the eligibility decision, the county takes into consideration income, obligations, children, ability to repay the county for materials and laboratory fees, and age for certain phases of expensive dentistry."

Upon his acceptance the patient receives a complete examination, including a full set of radiographs and study models. On a subsequent visit a diagnosis is made, a treatment plan is formulated, and he is assigned to the proper departments for dental care.

The success of the Date County clinic has spilled over into the State of Florida itself and throughout the nation. Four other dental research clinics have risen in the state and over 20 have sprung up around the nation. With parental pride, the Dade clinic offers instructive material and films to other groups interested in starting a clinic patterned after theirs.

Ever aware of their achievements as well as their shortcomings, the Dade County Dental Research Clinic has a slogan: "We shall strive for the ideal, but will compromise for the practical—and the service we render helps everyone." This mixture of the ideal and the practical has helped further the clinic's goal of offering educational opportunities to member dentists and in so doing provides better dentistry for the community. Furthermore, projects of this type are a fine example of the efforts of organized dentistry in the United States to provide good dental care to all Americans and to raise the level of dentistry.

For the dentists participating in the Dade clinic program there is great satisfaction and benefit. The doctor has a sense of pride in sharing knowledge with his colleagues; in helping indigent people obtain adequate dental care; and in helping young men and women acquire a profession that will give them a decent livelihood.

Dr. James L. Armstrong.

DENTAL ARCHES TO FIELD ARCHERY

By HARRY CIMRING, D.D.S.

Dr. Fred F. Simmons, Jr.

Dr. Fred F. Simmons, Jr., Houston, Texas, dentist, can often be found with a quiver at his side but not in his arm. This mechanical equipment and physical attribute led to his winning the 15th National Field Archery championship last summer at Grayling National Forest in Michigan.

The latter-day William Tell, son of a dentist who is also an active archer, practices general dentistry part-time with his father and instructs in dentistry part-time at his alma mater, the University of Texas, from which he graduated three years ago. A member of Psi Omega and Omicron Kappa Upsilon, he is particularly interested in full mouth rehabilitation and at the dental school spends much of his time in clinical instruction to senior students.

In undergraduate days he was active in tennis and fencing; later engaged in professional outboard hydroplane racing and established records in B-hydroplanes and B-runabouts in 1955. He even won a first place in a United States-Mexico sports car rally. It was while recovering from an outboard racing crack-up (and his boat was being repaired) that he became

interested in archery and has been an ardent devotee ever since.

With the same enthusiasm and determination he showed in other sports, he undertook a course of instruction in archery and in five short years won a number of club, state, and regional championships, climaxing with the national. In two previous tries at the latter, he placed 13th and 18th. In competition the "Cary Middlecoff of archery" wears golf shoes for firm footing, a plaid snap-brim hat, and a towel hanging from his belt to dry his hands. His wife, Sharyn, also an archer, follows him around during his various competitions, sitting on a folding golf seat, watching every shot. She lends moral support when he is under stress, offers comments on his form and technic, and has become his unofficial coach. Now there is an infant daughter that accompanies them as they make the rounds.

Field and Target

Field archery was devised as an off-season sport for bow-hunters (and bow fishermen, for that matter). In the hope of catching the public fancy and promoting it as a spectator sport, several invitational money tournaments have been held. In the NFAA event won by the dentist-archer there were 84 targets at distances of 10 to 80 yards in three categories: field, hunter, and animal. Two major titles were at stake for both men and women: free-style and instinctive. The winner of the latter event is recognized as national champion. In free-style a pin (calibrated peep-sight) adjustable to various distances is employed. The instinctive shooter aims only with his arrow. There is a further difference between field and target archery: in the latter the archer knows the distance he is shooting; in the former he must contend with such factors as optical illusion, light and shadow, and flat or hilly terrain in determining how far away his target is.

Proposed for Olympics

Currently an attempt is being made to include archery in the Olympic Games but the settlement of that question is still in doubt at this writing. The NFAA is also carrying on a campaign for the advancement and extension of conservation programs to preserve wooded areas and wild life generally. Modern technology has produced fiber-glass bows and aluminum arrows that help develop archers who would put to shame Robin Hood and the men of Crecy and Agincourt, not to mention the Indians of North America. Among the nation's archers there is a small segment that devotes itself to the mysteries of the crossbow, both hunting and target. Still another facet of the sport is development of night-time target archery to take advantage of after-work leisure time. Various lighting systems are being developed for this pastime.

While shooting in tournament, Dr. Simmons is described as a deadpan, untalkative competitor. He first glares at the target, then stares at the ground while nocking his arrow. When his opponent shoots, he turns away, sometimes squatting on his haunches or whispering to his wife. He uses a 69-inch, 38-pound bow, a 12-strand endless string and a nylon bristle elevated arrow shelf. His aluminum-shafted arrows are four-feathered and 28½ inches long. He nocks them above his three bow fingers instead of between, the most common method. Concentration and relaxation, each in its proper place and its proper time, are his secrets of success.

He heartily recommends the sport. It is relatively inexpensive, relaxing and competitive, with all the benefits of outdoor recreation, especially for those fond of hunting, fishing, and stump shooting. It is an all-round wholesome pastime for the entire family.

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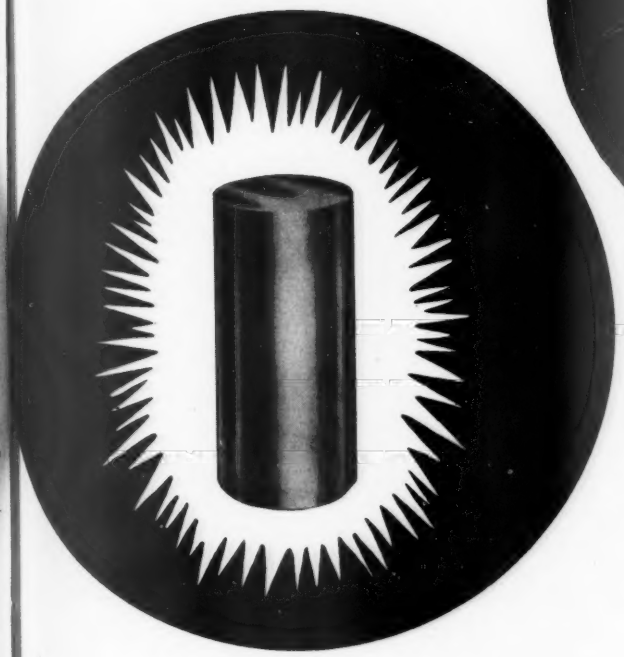

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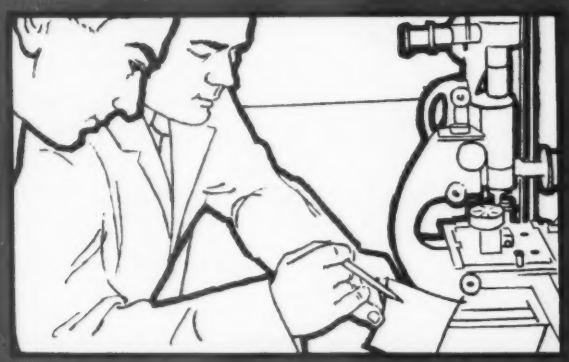

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